

In the Claims

The following is a complete listing of the claims and replace all prior claims in the application:

- 1 1. (Currently Amended) A method for providing protrusion feedback for a
2 read/write element, comprising:
 - 3 writing reference data at a radius on a recording medium using a head;
 - 4 attempting to read the written reference data;
 - 5 determining whether the read attempt was successful; **and**
 - 6 adjusting a level of heating on a heating element at the head to increase protrusion
 - 7 of the head until the read attempt is successful;
 - 8 determining whether the heating due to the writing process is too low to provide
 - 9 correct data writing; and
 - 10 adjusting the heating until the writing is determined to be correct.
- 1 2. (Original) The method of claim 1 further comprising recording the
2 level of heating required to read the reference data successfully.
- 1 3. (Original) The method of claim 2, wherein the recording further
2 comprises recording the level of heating on a disk.
- 1 4. (Original) The method of claim 2, wherein the attempting to read the
2 reference data is performed at different drive temperatures.

1 5. (Original) The method of claim 4, wherein the recording the level of
2 heating required to read the reference data successfully further comprises providing the
3 heating levels for the different temperatures in a look-up table for providing a correct
4 heating level at any temperature.

1 6. (Original) The method of claim 1, wherein the attempting to read the
2 reference data is performed at different drive temperatures.

1 7. (Canceled)

1 8. (Currently Amended) The method of claim 7 1 further comprises
2 recording the heating level for obtaining correct data writing.

1 9. (Currently Amended) A drive system signal processor, comprising:
2 a memory for storing data thereon; and
3 a processor, coupled to the memory, for writing with a head reference data at a
4 radius on a recording medium, attempting to read the written reference data, determining
5 whether the read attempt was successful and adjusting a level of heating on a heating
6 element for the head to increase protrusion of the head until the read attempt is
7 successful, wherein the processor determines whether the heating due to the writing
8 process is too low to provide correct data writing and adjusts the heating until the writing
9 is determined to be correct.

1 10. (Original) The drive system signal processor of claim 9, wherein the
2 processor records the level of heating required to read the reference data successfully.

1 11. (Original) The drive system signal processor of claim 10, wherein the
2 processor records the level of heating on a disk.

1 12. (Original) The drive system signal processor of claim 10, wherein the
2 processor performs attempts to read the reference data at different drive temperatures.

1 13. (Original) The drive system signal processor of claim 12, wherein the
2 processor stores the heating levels for the different temperatures in a look-up table for
3 providing a correct heating level at any temperature.

1 14. (Original) The drive system signal processor of claim 9, wherein the
2 processor attempts to read the reference data at different drive temperatures.

1 15. (Canceled)

1 16. (Currently Amended) The drive system signal processor of claim ~~15~~ 9,
2 wherein the processor records the heating level for obtaining correct data writing.

1 17. (Currently Amended) A storage device, comprising:
2 a magnetic recording medium for recording data thereon;
3 a transducer having an MR element for reading data stored on the magnetic
4 recording medium and a heating element for increasing protrusion;
5 a motor, coupled to the magnetic recording medium, for translating the magnetic
6 recording medium;
7 an actuator, coupled to the transducer, for translating the transducer relative to the
8 magnetic recording medium; and
9 a storage device signal processor, coupled to the motor, transducer and actuator,
10 for writing with the transducer reference data at a radius on the magnetic recording
11 medium, attempting to read the written reference data, determining whether the read
12 attempt was successful and adjusting the level of heating on the heating element to
13 increase protrusion of the transducer until the read attempt is successful, wherein the
14 storage device signal processor determines whether the heating due to the writing process
15 is too low to provide correct data writing and adjusts the heating until the writing is
16 determined to be correct.

1 18. (Original) The storage device of claim 17, wherein the storage device
2 signal processor records the level of heating required to read the reference data
3 successfully.

1 19. (Original) The storage device of claim 18, wherein the storage device
2 signal processor records the level of heating on a disk.

1 20. (Original) The storage device of claim 18, wherein the storage device
2 signal processor performs attempts to read the reference data at different drive
3 temperatures.

1 21. (Original) The storage device of claim 20, wherein the storage device
2 signal processor stores the heating levels for the different temperatures in a look-up table
3 for providing a correct heating level at any temperature.

1 22. (Original) The storage device of claim 17, wherein the storage device
2 signal processor attempts to read the reference data at different drive temperatures.

1 23. (Canceled)

1 24. (Currently Amended) The storage device of claim 23 17, wherein the
2 storage device signal processor records the heating level for obtaining correct data
3 writing.

- 1 25. (Currently Amended) A program storage device readable by a computer,
- 2 the program storage device tangibly embodying one or more programs of instructions
- 3 executable by the computer to perform a method for providing protrusion feedback for a
- 4 read/write element, the method comprising:
 - 5 writing reference data at a radius on a recording medium using a head;
 - 6 attempting to read the written reference data;
 - 7 determining whether the read attempt was successful; and
 - 8 adjusting a level of heating on a heating element at the head to increase protrusion
 - 9 of the head until the read attempt is successful;
 - 10 determining whether the heating due to the writing process is too low to provide
 - 11 correct data writing; and
 - 12 adjusting the heating until the writing is determined to be correct.
- 1 26-27. (Canceled)